

IDS 7/14/2004

m/10/10/06

<b>Notice of References Cited</b>	Application/Control No. <del>00/054,128</del> 10/647,654	Applicant(s)/Patent Under Reexamination Ingham, ET AL.	
	Examiner BRAINNOCK Claire M. Kaufman	Art Unit 1649 1040	Page 1 of 1

## U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS	DOCUMENT SOURCE **	
							APS	OTHER
<input checked="" type="checkbox"/>	A	4,774,322	09/1988	Seyedin et al.			<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	B						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	C						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	D						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	E						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	F						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	G						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	H						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	I						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	J						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	K						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	L						<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	M						<input type="checkbox"/>	<input type="checkbox"/>

## FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS	DOCUMENT SOURCE **	
								APS	OTHER
<input type="checkbox"/>	N							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	O							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	P							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Q							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	R							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	S							<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	T							<input type="checkbox"/>	<input type="checkbox"/>

## NON-PATENT DOCUMENTS

*		DOCUMENT (Including Author, Title Date, Source, and Pertinent Pages)	DOCUMENT SOURCE **	
			APS	OTHER
<input checked="" type="checkbox"/>	U	Iwamoto et al., Actions of hedgehog proteins on skeletal cells, Crit. Rev. Oral Biol. Med., 10(4):477-486, 1999 (abstract).	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	V	Iwasaki et al., Age-dependent effects of hedgehog protein on chondrocytes, J. Bone Joint Surg. Br., 81(6):1076-1082, Nov. 1999 (abstract).	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	W	Katsuura et al., The NH2-terminal region of the active domain of sonic hedgehog is necessary for its signal transduction, FEBS Lett., 447(2-3):325-328, March 1999 (abstract).	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	X	Williams et al., Functiona antagonists of sonic hedgehog reveal the importance of the N terminus for activity, J. Cell Sci., 112(Pt 23):4405-4414, Dec. 1999 (abstract).	<input type="checkbox"/>	<input type="checkbox"/>

\*A copy of this reference is not being furnished with this Office action. (See Manual of Patent Examining Procedure, Section 707.05(a).)

\*\*APS encompasses any electronic search i.e. text, image, and Commercial Databases.

U.S. Patent and Trademark Office  
PTO-892 (Rev. 03-98)

Notice of References Cited

Part of Paper No. 22

10/10/06

Form PTO-1449

**INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION**  
(Use several sheets if necessary)

Docket Number (Optional)

~~10/647,654~~

Application Number

~~68054138~~

10/647,654

Applicant  
Ingham et al.Filing Date  
20 Oct 1997Group Art Unit  
1646

1649

**U.S. PATENT DOCUMENTS**


EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE

**FOREIGN PATENT DOCUMENTS**

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO

**OTHER DOCUMENTS**

(Including Author, Title, Date, Pertinent Pages Etc.)

	AA	Chang et al., "Products, genetic linkage, and limb patterning activity of a murine <i>hedgehog</i> gene", Development 120: 3339-3353 (1994).

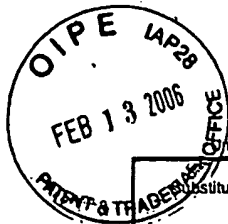
EXAMINER		
----------	--	--

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.



10/10/06

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE



PTO/SB/08a/b (07-05)

Approved for use through 07/31/2008. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	10/647654
				Filing Date	August 25, 2003
				First Named Inventor	Philip W. Ingham
				Art Unit	1645 1649
				Examiner Name	G. M. Kaufman <i>BRANNICK</i>
Sheet 1 of 1	Attorney Docket Number	HMSU-P17-006			

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	GB	Sampedro, J. and Guerrero, I., "Unrestricted expression of the Drosophila gene patched allows a normal segment polarity", <i>Nature</i> , Vol. 353, pages 187-190 (1991)	
	GC	To, L.P., et al., "Development and Characterization of a Whole-Cell Radioligand Binding Assay for [125I]gp120 of HIV-1", <i>Journal of Immunoassay</i> , Vol. 13(1), pages 61-83 (1992)	
	GD	Verma, U. and Laumas, K., "Screening of anti-progestins using in vitro human uterine progesterone receptor assay system", <i>Journal of Steroid Biochemistry</i> , Vol. 14(8), pages 733-740 (1981)	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature	<i>[Signature]</i>	Date Considered	10/13/06
--------------------	--------------------	-----------------	----------

Form PTO-1449

## INFORMATION DISCLOSURE

CITATION  
IN AN APPLICATION

(Use several sheets if necessary)

Docket Number (Optional)  
HMV-006.12Application Number  
~~08/954,128~~  
10/647,654

Applicant Ingham, Philip, et al.

Filing Date 20 October 1997

Group Art Unit 1649

## U.S. PATENT DOCUMENTS

EXAM. INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
✓	AA 5,223,408	6/29/93	Goeddel et al.	435	69.3	
✓	AB 5,585,087	12/17/96	Lustig et al.	424	9.2	
	AC					
	AD					
	AE					

## FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION
						YES NO
✓	AF WO 90/02809	3/22/90	PCT	C12P	21/00	
✓	AG WO 92/15679	9/17/92	PCT	C12N	15/10	
	AH					
	AI					
	AJ					

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

✓	AK	Anderson, R. et al., "Maintenance of ZPA signaling in cultured mouse limb bud cells", <i>Devel.</i> 117:142-1433 (1993).
	AL	Angier, N. "Biologists find key genes that shape patterning of embryos", <i>New York Times</i> , Jan 11, 1994, C-1.
	AM	Basler, K. and G. Struhl, "Compartment boundaries and the control of <i>Drosophila</i> limb pattern by <i>hedgehog</i> protein", <i>Nature</i> 368: 208-214 (1994).
	AN	Basler, K. et al., "Control of cell pattern in the neural Tube: Regulation of cell differentiation by <i>dorsalin-1</i> , a novel TGFβ family member", <i>Cell</i> 73:687-702 (1993).
	AO	Bass, S. et al., "Hormone phage: An Enrichment Method for Variant Proteins with Altered Binding Properties", <i>PROTEINS: Structure, Function, and Genetics</i> 8:309-314 (1990).
	AP	Bejsovec, A. and E. Wieschaus, "Segment polarity gene interactions modulate epidermal patterning in <i>Drosophila</i> embryos", <i>Devel.</i> 119:501-517 (1993).
	AQ	Bienzi, M., "Homeotic genes and positional signalling in the <i>Drosophila</i> viscera", <i>TIG</i> 10:22-26 (Jan. 1994).
	AR	Bitgood, M. and McMahon, A., "Hedgehog and Bmp Genes are Coexpressed at Many Diverse Sites of Cell-Cell Interaction in the Mouse Embryo", <i>Dev. Biol.</i> 172 (1):126-138 (1995).
	AS	Blair, S.S., "Hedgehog digs up an old friend", <i>Nature</i> 373:656-657 (23 Feb.1995).
	AT	Bone et al., <i>Endo. Meta.</i> 2:160-184 (1995).
	AU	Brand-Saberi, B. et al., "The ventralizing effect of the notochord on somite differentiation in chick embryos", <i>Anat. Embryol.</i> 188: 239-245 (1993).
	AV	Brockes, J., "We may not have a morphogen", <i>Nature</i> 350:15 (1991).
✓	AW	Bumcrot, D.A. and McMahon A. "Sonic Hedgehog: Making the gradient", <i>Chem. Biol.</i> 3 (1):13-16 (Jan 1996).

EXAMINER

DATE CONSIDERED

10/10/06

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Form PTO-1449		Docket Number (Optional) <del>HMV-006.12</del>	Application Number <del>06/954,128</del> 10/647,654
<b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b> (Use several sheets if necessary)		Applicant <b>Ingham, Philip, et al.</b>	
		Filing Date <b>28 October 1997</b>	Group Art Unit <b>1649</b>
<b>OTHER DOCUMENTS</b> (Including Author, Title, Date, Pertinent Pages, Etc.)			
<input checked="" type="checkbox"/>	AX	Bumcrot, D.A. and McMahon, A., "Somite differentiation. Sonic signals somites", <i>Curr. Biol.</i> <b>5</b> (6):612-614 (June 1995).	
<input type="checkbox"/>	AY	Bumcrot, D.A. et al., "Proteolytic processing yields two secreted forms of sonic hedgehog", <i>Mol. Cell. Biol.</i> <b>15</b> (4):2294-2303 (4/95).	
<input type="checkbox"/>	AZ	Charité, J. et al., "Ectopic Expression of <i>Hoxb-8</i> Causes Duplication of the ZPA in the Forelimb and Homeotic Transformation of Axial Structures", <i>Cell</i> <b>78</b> :589-601 (1994).	
<input type="checkbox"/>	BA	Coffman et al., "Xotch, the <i>Xenopus</i> homolog of <i>Drosophila</i> notch", <i>Science</i> <b>249</b> :1438-1441 (1990)	
<input type="checkbox"/>	BB	Concordet, J. and Ingham, P., "Developmental biology. Patterning goes sonic", <i>Nature</i> <b>375</b> (6529):279-280 (May 1995)	
<input type="checkbox"/>	BC	Currie et al., "Induction of a specific muscle cell type by a hedgehog-like protein in zebrafish", <i>Nature</i> <b>383</b> :452-455 (1996)	
<input type="checkbox"/>	BD	Curry et al., "Sequence analysis reveals homology between two proteins of the flagellar radial spoke", <i>Mol. Cell. Biol.</i> <b>12</b> :3967-3977 (1992)	
<input type="checkbox"/>	BE	Davidson, E.H., "How embryos work: a comparative view of diverse modes of cell fate specification", <i>Devel.</i> <b>108</b> :365-389 (1990)	
<input type="checkbox"/>	BF	Davis, A.P. and M.R. Capecchi, "Axial homeosis and appendicular skeleton defects in mice with a targeted disruption of <i>hoxd-1</i> ", <i>Devel.</i> <b>120</b> :2187-2198 (1994)	
<input type="checkbox"/>	BG	Dickinson W., "Molecules and morphology: Where's the homology", <i>TIG</i> <b>11</b> , (4):119-120 (1995)	
<input type="checkbox"/>	BH	Dingemans, M.A. et al., "The expression of liver-specific genes within rat embryonic hepatocytes is a discontinuous process", <i>Differentiation</i> <b>56</b> :153-162 (1994)	
<input type="checkbox"/>	BI	Dollé, P. et al., "Coordinate expression of the murine <i>Hox-5</i> complex homoeobox-containing genes during limb pattern formation", <i>Nature</i> <b>342</b> :767-772 (1989)	
<input type="checkbox"/>	BJ	Dollé, P. et al., "Disruption of the <i>Hoxd-13</i> gene induces localized heterochrony leading to mice with neotenic limbs", <i>Cell</i> <b>75</b> :431-441 (1993)	
<input type="checkbox"/>	BK	Echelard, Y. et al., "Sonic hedgehog, a member of a family of putative signaling molecules, is implicated in the regulation of CNS polarity", <i>Cell</i> <b>75</b> :1417-1430 (1993)	
<input type="checkbox"/>	BL	Ekker, S. et al., "Distinct expression and shared activities of members of the hedgehog gene family of <i>xenopus laevis</i> ", <i>Devel.</i> <b>121</b> (8):2337-2347 (Aug 1995)	
<input type="checkbox"/>	BM	Ericson, J. et al., "Sonic hedgehog induces the differentiation of ventral forebrain neurons: a common signal for ventral patterning within the neural tube", <i>Cell</i> <b>81</b> (5):747-756 (June 1995)	
<input type="checkbox"/>	BN	Ettelaie, C. et al., "The effect of lipid peroxidation and lipolysis on the ability of lipoproteins to influence thromboplastin activity", <i>Biochim. Biophys. Acta.</i> <b>1257</b> (1):25-30 (June 1995).	
<input type="checkbox"/>	BO	Fahrner, K. et al., "Transcription of <i>H-2</i> and <i>Qa</i> genes in embryonic and adult mice", <i>EMBO J.</i> <b>6</b> :1265-1271 (1987)	
<input type="checkbox"/>	BP	Fallon, J.F. et al., "FGF-2: Apical ectodermal ridge growth signal for chick limb development", <i>Science</i> <b>264</b> :104-107 (1994)	
<input type="checkbox"/>	BQ	Fan, C. et al., "Long-range sclerotome induction by sonic hedgehog: Direct role of the amino-terminal cleavage product and modulation by the cyclic AMP signaling pathway", <i>Cell</i> <b>81</b> :457-465 (5 May 1995)	
<input type="checkbox"/>	BR	Fietz, M. et al., "The hedgehog gene family in <i>Drosophila</i> and vertebrate development", <i>Devel. Supp.</i> 43-51 (1994)	
<input checked="" type="checkbox"/>	BS	Forbes, A.J. et al., "Genetic analysis of <i>hedgehog</i> signalling in the <i>Drosophila</i> embryo", <i>Devel.</i> <b>119</b> (Supp.):115-124 (1993)	
EXAMINER <i>None</i>		DATE CONSIDERED <i>10/10/06</i>	
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.			
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE			

Form PTO-1449		Docket Number (Optional) <b>HMV-006.12</b>	Application Number <b>087934,128</b> <b>10/647,659</b>
<b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b> (Use several sheets if necessary)		Applicant <b>Ingham, Philip, et al.</b>	
		Filing Date <b>20 October 1997</b>	Group Art Unit <b>1649</b>
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
<input checked="" type="checkbox"/>	BT	Francis, P.H. et al., "Bone morphogenetic proteins and a signalling pathway that controls patterning in the developing chick limb", <i>Devel.</i> <b>120</b> :209-218 (1994)	
<input type="checkbox"/>	BU	Gallop, M. et al., "Applications of combinatorial technologies to drug discovery. 1. Background and peptide combinatorial libraries", <i>J. of Med. Chem.</i> <b>37</b> (9):1233-1251 (1994)	
<input type="checkbox"/>	BV	Gérard, M. et al., "Structure and activity of regulatory elements involved in the activation the the <i>Hoxd-11</i> gene during late gastrulation", <i>EMBO J.</i> <b>12</b> :3539-3550 (1993)	
<input type="checkbox"/>	BW	Gurdon, J.B., "The Generation of diversity and pattern in animal development", <i>Cell</i> <b>68</b> :185-199 (1992)	
<input type="checkbox"/>	BX	Gustin, K. et al., "Characterization of the role of individual protein binding motifs within the hepatitis B virus enhancer 1 on X promoter activity using linker scanning mutagenesis", <i>Virology</i> <b>193</b> :653-660 (1993)	
<input type="checkbox"/>	BY	Hall, T., et al., "A potential catalytic site revealed by the 1.7-A crystal structure of the amino-terminal signalling domain of Sonic hedgehog", <i>Nature</i> <b>378</b> (6553):212-216 (Nov 1995)	
<input type="checkbox"/>	BZ	Halpern, M.E., et al., "Induction of muscle pioneers and floor plate is distinguished by the zebrafish <i>no tail</i> mutation", <i>Cell</i> <b>75</b> :99-111 (1993)	
<input type="checkbox"/>	CA	Hamburger, V. and H.L. Hamilton, "A series of normal stages in the development of the chick embryo", <i>J. Morph.</i> <b>88</b> :49-92 (1951)	
<input type="checkbox"/>	CB	Hammerschmidt, M. et al., "The world according to hedgehog", <i>TIG</i> <b>13</b> (1):14-21 (1997)	
<input type="checkbox"/>	CC	Haramis, A. et al., "The limb deformity mutation disrupts the SHH/FGF-4 feedback loop and regulation of 5-HoxD genes during limb pattern formation", <i>Devel.</i> <b>121</b> (12):4161-4170 (Dec 1995)	
<input type="checkbox"/>	CD	Hardy, A., et al., "Gene expression, polarising activity and skeletal patterning in reaggregated hind limb mesenchyme", <i>Devel.</i> <b>121</b> (12):4329-4337 (Dec 1995)	
<input type="checkbox"/>	CE	Hatta, K. et al., "The cyclops mutation blocks specification of the floor plate of the zebrafish central nervous system", <i>Nature</i> <b>350</b> :339-341 (1991)	
<input type="checkbox"/>	CF	Heberlein, U. et al., "The TGB $\beta$ homolog <i>dpp</i> and the segment polarity gene <i>hedgehog</i> are required for propagation of a morphogenetic wave in the <i>Drosophila</i> retina", <i>Cell</i> <b>75</b> :913-926 (1993)	
<input type="checkbox"/>	CG	Heemskerk, J. and S. DiNardo, " <i>Drosophila hedgehog</i> acts as a morphogen in cellular patterning", <i>Cell</i> <b>76</b> :449-460 (1994)	
<input type="checkbox"/>	CH	Hidalgo, A. and P. Ingham, "Cell patterning in <i>Drosophila</i> segment: spatial regulation of the segment polarity gene <i>patched</i> ", <i>Devel.</i> <b>110</b> :291-301 (1990)	
<input type="checkbox"/>	CI	Hooper, J. and Scott, M., "The <i>Drosophila</i> <i>patched</i> gene encodes a putative membrane protein required for segmental patterning", <i>Cell</i> <b>59</b> :751-765 (1989)	
<input type="checkbox"/>	CJ	Hynes, R.O., "Integrins: A family of Cell Surface Receptors", <i>Cell</i> <b>48</b> :549-554 (1987)	
<input type="checkbox"/>	CK	Hynes, M., et al., "Induction of midbrain dopaminergic neurons by Sonic hedgehog", <i>Neuron</i> <b>15</b> (1):35-44 (July 1995)	
<input type="checkbox"/>	CL	Ingham, P.W., "Signalling by hedgehog family proteins in <i>Drosophila</i> and vertebrate development", <i>Curr. Opin. Genet. Dev.</i> <b>5</b> (4):478-484 (Aug 1995)	
<input type="checkbox"/>	CM	Ingham, P.W., " <i>Hedgehog</i> points the way", <i>Current Biology</i> <b>4</b> (4):347-350 (1994)	
<input checked="" type="checkbox"/>	CN	Ingham, P.W., "Localized <i>hedgehog</i> activity controls spatial limits of <i>wingless</i> transcription in the <i>Drosophila</i> embryo", <i>Nature</i> <b>366</b> :560-562 (1993)	
EXAMINER <i>[Signature]</i>		DATE CONSIDERED <b>10/10/06</b>	
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP $\square$ 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.			

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

LIB 3 /0120934.01

Form PTO-1449		Docket Number (Optional) <del>HMV-006-12</del>	Application Number 08/954,128 10/647,654
<b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b> (Use several sheets if necessary)		Applicant Ingham, Philip, et al.	
		Filing Date 20 October 1997	Group Art Unit 1649
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>			
W	CO	Ingham, P.W. and A. Hidalgo, "Regulation of wingless transcription in the <i>Drosophila</i> embryo", <i>Devel.</i> 117:283-291 (1993)	
	CP	Ingham, P.W. et al., "Role of the <i>Drosophila</i> patched gene in positional signalling", <i>Nature</i> 353:184-187 (1991)	
	CQ	Izpisua-Belmonte, J.-C. et al., "Expression of the homeobox <i>Hox-4</i> genes and the specification of position in chick wing development", <i>Nature</i> 350:585-589 (1991)	
	CR	Izpisua-Belmonte, J.-C. et al., "Expression of <i>Hox-4</i> genes in the chick wings links pattern formation to the epithelial-mesenchymal interactions that mediate growth", <i>EMBO J.</i> 11:1451-1457 (1992)	
	CS	Jiang, J. and Struhl, G., "Protein kinase A in hedgehog signalling in <i>Drosophila</i> limb development", <i>Cell</i> 80 (4):563-572 (Feb 1995)	
	CT	Jessel, T.M. and D.A. Melton, "Diffusible factors in vertebrate embryonic induction", <i>Cell</i> 68:257-270 (1992)	
	CU	Johnson, R.L. and C. Tabin, "The long and short of hedgehog signaling", <i>Cell</i> 81:313-315 (5 May 1995)	
	CV	Johnson, R.L. et al., "Patched overexpression alters wing disc size and pattern: transcriptional and post-transcriptional effects on hedgehog targets", <i>Devel.</i> 121 (12):4237-4245 (Dec 1995)	
	CW	Johnson, R.L., et al., "Ectopic expression of Sonic hedgehog alters dorsal-ventral patterning of somites", <i>Cell</i> 79 (7):1165-1173 (Dec 1994)	
	CX	Johnson, R.L. et al., "Mechanism of limb patterning", <i>Curr. Opin. Genet. Dev.</i> 4 (4):535-542 (Aug 1994)	
	CY	Johnson, R.L. et al., "Sonic hedgehog: a key mediator of anterior-posterior patterning of the limb and dorso-ventral patterning of axial embryonic structures", <i>Biochem. Soc. Trans.</i> 22 (3):569-574 (Aug 1994)	
	CZ	Jones, M. et al., "Involvement of bone morphogenetic protein-4 (BMP-4) and Vgr-L in morphogenesis and neurogenesis in the mouse", <i>Devel.</i> 111:531-542 (1991)	
	DA	Kalderon, D., "Morphogenetic signaling. Responses to hedgehog", <i>Curr. Biol.</i> 5 (6):580-582 (June 1995)	
	DB	Koonin, E., "A protein splice-junction motif in hedgehog family proteins", <i>Trends in Biochem. Sci.</i> 20 (4):141-142 (April 1995)	
	DC	Kornblihtt, A.R. et al., "Primary structure of human fibronectin: differential splicing may generate at least 10 polypeptides from a single gene", <i>EMBO J.</i> 4:1755-1759 (1985)	
	DD	Kornfeld, R. and S. Kornfeld, "Assembly of asparagine-Linked oligosaccharides", <i>Ann. Rev. Biochem.</i> 54:631-664 (1985)	
	DE	Krauss, S. et al., "Expression of the zebrafish paired box gene <i>pax[xf-b]</i> during early neurogenesis", <i>Devel.</i> 113:1193-1206 (1991)	
	DF	Krauss, S. et al., "A functionally conserved homolog of the <i>Drosophila</i> segment polarity gene <i>hh</i> is expressed in tissues with polarizing activity in zebrafish embryos", <i>Cell</i> 75:1431-1444 (1993)	
	DG	Lai, C. et al., "Patterning of the neural ectoderm of <i>Xenopus laevis</i> by the amino-terminal product of hedgehog autoproteolytic cleavage", <i>Devel.</i> 121 (8):2349-2360 (Aug 1995)	
	DH	Laufer, E. et al., "Sonic hedgehog and <i>Fgf-4</i> act through a signaling cascade and feedback loop to integrate growth and patterning of the developing limb bud", <i>Cell</i> 79:993-1003 (16 Dec. 1994)	
	DI	Lee, J.J. et al., "Secretion and localized transcription suggest a role in positional signaling for products of the segmentation gene <i>hedgehog</i> ", <i>Cell</i> 71:33-50 (1992)	
V	DJ	Lee, J. et al., "Autoproteolysis in hedgehog protein biogenesis", <i>Science</i> 266 (5190):1528-1537 (Dec 1994)	
EXAMINER		DATE CONSIDERED 10/10/06	
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.			
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE			

Form PTO-1449		Docket Number (Optional) <b>HMV-006.12</b>	Application Number <b>08/954,128</b> <b>10/647,654</b>
<b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b> (Use several sheets if necessary)		Applicant <b>Ingham, Philip, et al.</b>	
		Filing Date <b>20 October 1997</b>	Group Art Unit <b>1699</b>
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
<input checked="" type="checkbox"/>	DK	Levin, M. et al., "A molecular pathway determining left-right asymmetry in chick embryogenesis", <i>Cell</i> <b>82</b> (5):803-814 (Sept 1995)	
<input checked="" type="checkbox"/>	DL	Li, W. et al., "Function of protein kinase A in hedgehog signal transduction and Drosophila imaginal disc development", <i>Cell</i> <b>80</b> (4):553-562 (Feb 1995)	
<input checked="" type="checkbox"/>	DM	Lopez-Martinez, A. et al., "Limb-patterning activity and restricted posterior localization of the amino-terminal product of Sonic hedgehog cleavage", <i>Curr. Biol.</i> <b>5</b> (7):791-796 (July 1995)	
<input checked="" type="checkbox"/>	DN	Lumsden, A. and Graham, A., "Neural patterning: A forward role for hedgehog", <i>Curr. Biol.</i> <b>5</b> (12):1347-1350 (Dec 1995)	
<input checked="" type="checkbox"/>	DO	Ma, C. et al., "The segment polarity gene <i>hedgehog</i> is required for progression of the morphogenetic furrow in the developing Drosophila eye", <i>Cell</i> <b>75</b> :927-938 (1993)	
<input checked="" type="checkbox"/>	DP	Ma, C. and Moses, K., "Wingless and patched are negative regulators of the morphogenetic furrow and can affect tissue polarity in the developing Drosophila compound eye", <i>Devel.</i> <b>121</b> (8) 2279-2289 (Aug 1995)	
<input checked="" type="checkbox"/>	DQ	Marigo, V. et al., "Biochemical evidence that patched is the hedgehog receptor", <i>Nature</i> <b>384</b> : 176-179 (1996)	
<input checked="" type="checkbox"/>	DR	Maccabe, J.A. and B.W. Parker, "The target tissue of limb-bud polarizing activity in the induction of supernumerary structures", <i>J. Embryol. Exp. Morph.</i> <b>53</b> :67-73 (1979)	
<input checked="" type="checkbox"/>	DS	Martí, E. et al., "Distribution of Sonic hedgehog peptides in the developing chick and mouse embryo", <i>Devel.</i> <b>121</b> (8):2537-2547 (Aug 1995)	
<input checked="" type="checkbox"/>	DT	Martí, E. et al., "Requirement of 19K form of Sonic hedgehog for induction of distinct ventral cell types in CNS explants" <i>Nature</i> <b>375</b> (6529):322-325 (May 1995)	
<input checked="" type="checkbox"/>	DU	Mavillo, F. et al., "Activation of four homeobox gene clusters in human embryonal carcinoma cells induced to differentiate by retinoic acid", <i>Differentiation</i> <b>37</b> :73-79 (1988)	
<input checked="" type="checkbox"/>	DV	McGinnis, W. and R. Krumlauf, "Homeobox genes and axial patterning", <i>Cell</i> <b>68</b> :283-302 (1992)	
<input checked="" type="checkbox"/>	DW	Mohler, J., "Requirements for <i>hedgehog</i> , a segmental polarity gene, in patterning larval and adult cuticle of Drosophila", <i>Genetics</i> <b>120</b> :1061-1072 (1988)	
<input checked="" type="checkbox"/>	DX	Mohler, J. and K. Vani, "Molecular organization and embryonic expression of the <i>hedgehog</i> gene involved in cell-cell communication in segmental patterning of Drosophila", <i>Devel.</i> <b>115</b> :957-971 (1992)	
<input checked="" type="checkbox"/>	DY	Morgan, B.A. et al., "Targeted misexpression of <i>Hox-4.6</i> in the avian limb bud causes apparent homeotic transformations", <i>Nature</i> <b>358</b> :236-239 (1992)	
<input checked="" type="checkbox"/>	DZ	Munsterberg A. et al., "Combinatorial signaling by Sonic hedgehog and Wnt family members induces myogenic bHLH gene expression in the somite", <i>Genes Dev.</i> <b>9</b> (23):2911-2922 (Dec 1995)	
<input checked="" type="checkbox"/>	EA	Nakano, Y. et al., "A protein with several possible membrane-spanning domains encoded by the Drosophila segment polarity gene <i>patched</i> ", <i>Nature</i> <b>341</b> :508-513 (1989)	
<input checked="" type="checkbox"/>	EB	Ngo, J. et al., "The protein folding problem and tertiary structure prediction", Merz and LeGrand, ed. Birkhauser, Boston (1994)	
<input checked="" type="checkbox"/>	EC	Niswander, L. and G.R. Martin, "FGF-4 and BMP-2 have opposite effects on limb growth", <i>Nature</i> <b>361</b> :68-71 (1993)	
<input checked="" type="checkbox"/>	ED	Niswander, L. et al., "A positive feedback loop coordinates growth and patterning in the vertebrate limb", <i>Nature</i> <b>371</b> (6498): 609-612 (Oct 1994)	
<input checked="" type="checkbox"/>	EE	Nohno, T. et al., "Involvement of the <i>Chox-4</i> chicken homeobox genes in determination of anteroposterior axial polarity during limb development", <i>Cell</i> <b>64</b> :1197-1205 (1991)	
<input checked="" type="checkbox"/>	EF	Nohno, T. et al., "Involvement of the Sonic hedgehog gene in chick feather formation", <i>Biochem. Biophys. Res. Comm.</i> <b>206</b> (1): 33-39 (Jan 1995)	
<input checked="" type="checkbox"/>	EG	O'Farrell, P.H., "Unanimity waits in the wings", <i>Nature</i> <b>368</b> :188-189 (1994)	
EXAMINER <i>[Signature]</i>		DATE CONSIDERED <b>10/10/06</b>	
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.			
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE			
LIB_3 /0120934.01			



Form PTO-1449		Docket Number (Optional) <b>HMV-006.12</b>	Application Number <b>08/054,128</b> <b>10/647,651</b>
<b>INFORMATION DISCLOSURE CITATION IN AN APPLICATION</b> (Use several sheets if necessary)		Applicant <b>Ingham, Philip, et al.</b>	
		Filing Date <b>20 October 1997</b>	Group Art Unit <b>1649</b>
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
<input checked="" type="checkbox"/>	EH	Parr, B.A. et al., "Mouse <i>Wnt</i> genes exhibit discrete domains of expression in the early embryonic CNS and limb buds", <i>Devel.</i> <b>119</b> :247-261 (1993)	
<input type="checkbox"/>	EI	Patel, N.H. et al., "The role of segment polarity genes during <i>Drosophila</i> neurogenesis", <i>Genes Devel.</i> <b>3</b> :890-904 (1989)	
<input type="checkbox"/>	EJ	Peifer, M., "The two faces of hedgehog", <i>Science</i> <b>266</b> (5190):1492-1493 (Dec 1994)	
<input type="checkbox"/>	EK	Perrimon, N., "Hedgehog and beyond", <i>Cell</i> <b>80</b> :517-520 (24 Feb. 1995)	
<input type="checkbox"/>	EL	Pham, A. et al., "The suppressor of fused gene encodes a novel PEST protein involved in <i>Drosophila</i> segment polarity establishment", <i>Genetics</i> <b>140</b> (2):587-598 (June 1995)	
<input type="checkbox"/>	EM	Placzek, M. et al., "Induction of floor plate differentiation by contact-dependent, homeogenetic signals", <i>Devel.</i> <b>117</b> :205-218 (1993)	
<input type="checkbox"/>	EN	Placzek, M. et al., "Orientation of commissural axons <i>in vitro</i> in response to a floor plate-derived chemoattractant", <i>Devel.</i> <b>110</b> :19-30 (1990)	
<input type="checkbox"/>	EO	Pollack, R.A. et al., "Altering the boundaries of <i>Hox3.1</i> expression: Evidence for antipodal gene regulation", <i>Cell</i> <b>71</b> :911-923 (1992)	
<input type="checkbox"/>	EP	Porter, J. et al., "The product of hedgehog autoproteolytic cleavage active in local and long-range signalling", <i>Nature</i> <b>374</b> (6520):363-366 (Mar 1995)	
<input type="checkbox"/>	EQ	Reeck et al., "Homology in proteins and nucleic acids: A terminology muddle and a way out of it", <i>Cell</i> <b>50</b> :667 (1987)	
<input type="checkbox"/>	ER	Rennie, J., "Super Sonic", <i>Scientific American</i> <b>20</b> (April 1994)	
<input type="checkbox"/>	ES	Riddle, R.D. et al., "Sonic hedgehog Mediates the Polarizing Activity of the ZPA", <i>Cell</i> <b>75</b> :1401-1416 (1993)	
<input type="checkbox"/>	ET	Riddle, R.D. et al., "Induction of the LIM homeobox gene <i>Lmx1</i> by WNT7a establishes dorsoventral pattern in the vertebrate limb", <i>Cell</i> <b>83</b> (6553):212-216 (Nov 1995)	
<input type="checkbox"/>	EU	Riley, B.B. et al., "Retroviral expression of FGF-2 (bFGF) affects patterning in chick limb bud", <i>Devel.</i> <b>118</b> :95-104 (1993)	
<input type="checkbox"/>	EV	Roberts, D. et al., "Sonic hedgehog is an endothermal signal inducing Bmp-4 and Hox genes during induction and regionalization of the chick hindgut", <i>Devel.</i> <b>121</b> (10): 3163-74 (Oct 1995)	
<input type="checkbox"/>	EW	Roelink, H. et al., "Floor plate and motor neuron Induction by different concentrations of the amino-terminal cleavage product of sonic hedgehog autoproteolysis", <i>Cell</i> <b>81</b> :445-455 (5 May 1995)	
<input type="checkbox"/>	EX	Roelink, H. et al., Floor plate and motor neuron induction by vhh-1, a Vertebrate Homolog of <i>hedgehog</i> expressed by the notochord", <i>Cell</i> <b>76</b> :761-775 (1994)	
<input type="checkbox"/>	EY	Sambrook et al., <i>Molecular Cloning</i> CSH:11.47 (1989)	
<input type="checkbox"/>	EZ	Sasaki, H. and B.L.M. Hogan, "Differential expression of multiple fork head related genes during gastrulation and axial pattern formation in the mouse embryo", <i>Devel.</i> <b>118</b> :47-59 (1993)	
<input type="checkbox"/>	FA	Savage, M. et al., "Distribution of FGH-2 suggests it has a role in chick limb bud growth", <i>Devel. Dynamics</i> <b>198</b> :159-170 (1993)	
<input checked="" type="checkbox"/>	FB	Schuske, K. et al., "Patched overexpression causes loss of <i>wingless</i> expression in drosophila embryos", <i>Devel. Biol.</i> <b>164</b> :300-311 (1994)	
EXAMINER <i>Marion</i>		DATE CONSIDERED <b>10/10/96</b>	
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.			

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Form PTO-1449

**INFORMATION DISCLOSURE  
CITATION  
IN AN APPLICATION**  
(Use several sheets if necessary)

Docket Number (Optional)

HMV-006.12

Application Number

087934,128

10/647,654

Applicant: Ingham, Philip, et al.

1649

Filing Date: ~~20~~ October 1997

Group Art Unit:

**OTHER DOCUMENTS** (Including Author, Title, Date, Pertinent Pages, Etc.)

<input checked="" type="checkbox"/>	FC	Smith, J.C., "Hedgehog, the floor plate, and the zone of polarizing activity", <i>Cell</i> <b>76</b> :193-196 (1994)
<input type="checkbox"/>	FD	Stachel, S.E. et al., "Lithium perturbation and <i>gooseoid</i> expression identify a dorsal specification pathway in the pregastrula zebrafish", <i>Devel.</i> <b>117</b> :1261-1274 (1993)
<input type="checkbox"/>	FE	Stolow, M. and Shi, Y., <i>Xenopus</i> sonic hedgehog as a potential morphogen during embryogenesis and thyroid hormone-dependent metamorphosis, <i>Nucleic Acids Res.</i> <b>23</b> (13):2555-1562 (July 1995)
<input type="checkbox"/>	FF	Stratagene 1988 cDNA libraries
<input type="checkbox"/>	FG	Tabata, T. and T.B. Kornberg, "Hedgehog Is a signaling protein with a key Role in patterning <i>Drosophila</i> imaginal discs", <i>Cell</i> <b>76</b> :89-102 (1994)
<input type="checkbox"/>	FH	Tabata, T. et al., "The <i>Drosophila</i> <i>hedgehog</i> gene is expressed specifically in posterior compartment cells and is a target of <i>engrailed</i> regulation", <i>Genes Devel.</i> <b>6</b> :2635-2645 (1992)
<input type="checkbox"/>	FI	Tabin, C.J., "Retinoids, homeoboxes, and growth factors: Toward molecular models for limb development", <i>Cell</i> <b>66</b> :199-217 (1991)
<input type="checkbox"/>	FJ	Tanebe, Y. et al., "Induction of motor neurons by Sonic hedgehog is independent of floor plate differentiation", <i>Curr. Biol.</i> <b>5</b> (6): 651-658 (June 1995)
<input type="checkbox"/>	FK	Tanaka, E. and Gann, A., "Limb development", <i>Curr. Biol.</i> <b>5</b> (6):594-597 (June 1995)
<input type="checkbox"/>	FL	Tashiro, S. et al., "Structure and expression of <i>hedgehog</i> , a <i>Drosophila</i> segment-polarity gene required for cell-cell communication", <i>Gene</i> <b>124</b> :183-189 (1993)
<input type="checkbox"/>	FM	Taylor, A.M. et al., "Contrasting distributions of patched and hedgehog proteins in the <i>Drosophila</i> embryo", <i>Mech. Dev.</i> <b>42</b> :89-96 (1993)
<input type="checkbox"/>	FN	Thaller, C. and G. Eichele, "Identification and spatial distribution of retinoids in the developing chick limb bud", <i>Nature</i> <b>327</b> :625-628 (1987)
<input type="checkbox"/>	FO	Tickle, C. et al., "A Quantitative Analysis of the Effect of all- <i>trans</i> -Retinoic Acid on the Pattern of Chick Wing Development", <i>Devel. Biol.</i> <b>109</b> :82-95 (1985)
<input type="checkbox"/>	FP	Tickle, C., "Vertebrate limb development", <i>Curr. Opin. Genet. Dev.</i> <b>5</b> (4):478-484 (Aug 1995)
<input type="checkbox"/>	FQ	Tickle, C. and Eichele, G., "Vertebrate limb development", <i>Annu. Rev. Cell Biol.</i> <b>10</b> :121-152 (1994)
<input type="checkbox"/>	FR	van Straaten, H.W.M. et al., "Effect of the notochord on the differentiation of a floor plate area in the neural tube of the chick embryo", <i>Anat. Embryol.</i> <b>177</b> :317-324 (1988)
<input type="checkbox"/>	FS	Vogel, A. and C. Tickle, "FGF-4 maintains polarizing activity of posterior limb bud cells in vivo and in vitro", <i>Devel.</i> <b>119</b> :199-206 (1993)
<input type="checkbox"/>	FT	Wallace et al., "Oligonucleotide probes for the screening of recombinant DNA libraries", <i>Methods in Enzymology</i> <b>152</b> :432 (1987)
<input checked="" type="checkbox"/>	FU	Wanek, N. et al., "Conversion by retinoic acid of anterior cells into ZPA cells in the chick wing bud", <i>Nature</i> <b>350</b> :81-83 (1991)

EXAMINER

DATE CONSIDERED

10/10/06

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

